

REMARK

Applicant respectfully requests reconsideration of this application as amended. Claims 25, 38, 40, 41, 42, 46, and 47 have been amended; claim 21 has been cancelled; no claims have been added; and claim 1 has been allowed. Therefore, claims 22-47 are now presented for examination.

First, the Applicant thanks the Examiner for his careful consideration of the Response previously filed.

The Examiner has noted that cancellation of the original claim 1 and the replacement of claim 1 with identical claim 21 was not proper. It was the understanding of the undersigned that in a CPA which abandons the original application, all claim numbers begin from the highest claim previously submitted. However, since this understanding is not correct, the Applicant has cancelled claim 21 and will prosecute the application with claim 1, since the cancellation of claim 1 was not entered.

The Examiner has noted the requirement for a new oath/declaration in accordance with MPEP §1414.01. In accordance with the same MPEP section, the Applicant has not submitted the new oath/declaration herein, but will submit it prior to allowance.

Objection

The Examiner has objected to claim 25 at line 1 as "claim24" should read "claim 24" for clarity. The Applicant has amended claim 25 as suggested by the Examiner. Therefore, the Applicant respectfully requests the Examiner to withdraw his objection to claim 25.

35 U.S.C. §112 Rejection

The Examiner rejected claims 38, 40, 41, 42, 43, 46, and 47 under 35 U.S.C. §112 for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

Specifically, the examiner points out the following:

In claim 38, line 3, after "encoded", "real-time" should be properly inserted in order to provide proper antecedent basis for the same as specified at claim 35, line 2.

In claim 40, line 4, after "encoded", "real-time" should be properly inserted in order to provide proper antecedent basis for the same as specified at claim 39, line 2.

In claim 41, line 2, "the communication channel" shows no clear antecedent basis.

In claim 42, line 6, "the encoded information" shows no clear antecedent basis.

In claim 46 line 9, after “encoded”, “real-time” should be properly inserted in order to provide proper antecedent basis for the same as specified at line 2.

In claim 47, lines 2-3, “the real-time data” shows no clear antecedent basis.

Claims 38, 40, 41, 42, 46, and 47 have been amended to comply with the requirements recited above. While the Examiner rejected claim 43, no specific example was given for its deficiency, and the Applicant cannot determine what the deficiency may be. Thus, claim 43 has not been amended.

The Applicant believes that the amendments to claims 38, 40, 41, 42, 46, and 47 overcome the 35 U.S.C. §112 rejection, and that claim 43 does not contain any deficiencies. Thus, the Applicant respectfully requests the Examiner to withdrawn his rejection of claims 38, 40, 41, 42, 43, 46, and 47.

35 U.S.C. §102 Rejection,

Nonoshita et al.

The Examiner rejected claim 39 under 35 U.S.C. §102(e) as being anticipated by Nonoshita, et al. (U.S. Patent No. 5,905,821). Specifically, the Examiner states that Nonoshita discloses:

an encoder for producing real-time information (illustrated by FIG. 22, and columns 1-6);

compression circuitry coupled to the encoder for producing compressed data based upon a previously stored transmit reference and the encoded real-time information (illustrated by FIG. 22 and reference number 2 of FIG. 2);

a plurality of output buffers coupled to the compression circuitry for storing the compressed data (illustrated by reference number 52 of FIG. 1, and reference numbers 70-73 of FIG. 4);

and a network interface coupled to the plurality of output buffers, the network interface transmitting compressed data from a selected output buffer of the plurality of output buffers, the compressed data from the selected output buffer when used in conjunction with the previously stored transmit reference approximating a next frame expected by a receiving apparatus (illustrated by reference number 7 of FIG. 2, reference number 57 of FIG. 1, and columns 5-6).

The Applicant respectfully traverses the Examiner's rejection, and reiterates the arguments previously presented. At the least, Nonoshita does not teach or suggest compression circuitry for producing compressed data based upon a previously stored transmit reference and the encoded real-time information, as suggested by the Examiner.

As evidenced by the description accompanying FIG. 22 (which the Examiner suggests illustrates the "compression circuitry" element of claim 39) at column 1, line 65 through column 2, line 13, compressed data is not based upon a previously stored transmit reference AND the encoded real-time information as required by the invention as recited by claim 39.

Instead, compressed data is based upon a previously stored transmit reference ONLY. As stated starting at column 2, line 2, "compressed image data of 200 dpi is temporarily stored into a frame memory 120. After that, the image data of the lowest resolution is formed in a multistage manner by a plurality of reduction circuits 121 and frame memories 122." As evidenced by this description, and by FIG. 22, encoded data is not used as an input to the compression circuitry 119, 121 that would otherwise form the compression circuitry of claim 39.

In Nonoshita, compression does not depend on encoding. At column 2, line 12-13, encoded data corresponding to compressed image data is formed by an encoder at every stage. Thus, as stated in column 2, line 9, an "encoder 124 executes the encoding for 100 dpi by using image data of 200 dpi and image data of 100 dpi."

This is further evidenced by column 1, lines 29-32 (describing a process related to FIG. 22, see column 1 lines 62-64 "FIG. 22 shows a circuit to compress the image data of 400 dpi into the image data of 12.5 dpi by using such an algorithm as mentioned above."). At column 1, lines 29-32, it is stated that "[d]ifferences between the compressed image data B_1 to B_4 , and the original image data A_1 to A_{16} , are encoded." Thus, compression does not depend upon encoding as required by claim 39.

At no time is the encoded data used to form the compressed data in Nonoshita. Since the invention as recited in claim 39 necessarily requires

encoded data to be used in forming compressed data, Nonoshita therefore does not anticipate claim 39.

While the Examiner points out that arguments directed to the limitation of "compressing data based upon encoded information" are deemed moot in view of the Examiner's new grounds of rejections (see Paper No. 17, paragraph 13), the Applicant does not see how such arguments can be ignored even in view of the new grounds of rejections, since the new grounds of rejections still state that the art cited by the Examiner teaches or suggests this limitation.

For at least the reasons stated, the Applicant respectfully requests that the Examiner's rejection to claim 39 be withdrawn.

35 U.S.C. §103 Rejections

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. (See MPEP §2143.)

Nonoshita et al. in view of Barberis et al.

The Examiner has rejected claims 22-28, 31, 34-35, 38, and 40-47 under

35 U.S.C. §103(a) as being unpatentable over Nonoshita et al. (U.S. Patent No. 5,905,821) and in further view of Barberis et al. (U.S. Patent No. 4,320,500).

Independent Claims 22, 24, 35, and 46

Each of claims 22, 24, 35, and 46 recite "compression circuitry coupled to the encoder and to the transmit reference buffer for producing compressed data based upon the current transmit reference and the encoded real-time information" (emphasis added). As explained above in addressing the Examiner's rejection of claim 39, Nonoshita does not teach or suggest this limitation.

Since Nonoshita does not teach or suggest at least this claim limitation recited in each of claims 22, 24, 35, and 46, and since Barberis does not teach or suggest this claim limitation, the Examiner has not established a prima facie case of obviousness. As such, the Applicant respectfully requests that the Examiner's rejection to claims 22, 24, 35, and 46 be withdrawn.

Dependent Claims 23, 25, 26, 27, 28, 31, 34, 38, 40, 41, and 47

Since it is believed that claims 22, 24, 35, 39, and 46 are allowable for the reasons discussed above, and since claim 23 depends from claim 22; claims 25-28, 31, and 34 depend from claim 24; claim 38 depends from claim 35; claims 40 and 41 depend from claim 39; and claim 47 depends from claim 46; and since

these dependent claims add further limitations, it is believed that these claims are allowable.

Additionally, with respect to claim 34, neither Nonoshita nor Barberis teaches or suggests output buffers that are dynamically created and configured in accordance with characteristics of a communication channel. In Nonoshita, the buffers A 70 to D 73 (see FIG. 4) are predetermined - the A buffer stores the image data on the high resolution side of an amount of four lines in the compressing process (column 5, lines 37-39); the B buffer stores the compressed image data of a low resolution which is lower by one rank (column 5, lines 46-47); the C buffer stores the image data of an amount of two words (column 5, lines 58-59); and the D buffer holds the encoded data formed by the decoder (column 5, lines 66-67). Thus, Nonoshita teaches away from dynamically created buffers, as required by claim 34.

In Barberis, output buffers are created in accordance with the number of nodes in the network (column 4, lines 20-42), not in accordance with characteristics of a communications channel.

Even to the extent that Nonoshita and/or Barberis teaches or suggests dynamically created buffers, there is no suggestion in Nonoshita or Barberis for the desirability of the combination. (See MPEP 2143.01, "The mere fact that references can be combined or modified does not render the resultant

combination obvious unless the prior art also suggests the desirability of the combination." (Emphasis added.)

As such, the Applicant respectfully requests that the Examiner withdraw his rejection to these claims.

Independent Claims 42 and 44

Each of claims 42 and 44 requires selecting one of a plurality of output buffers that are dynamically created based upon characteristics of a communication channel being used to transmit the differential data over the network.

As discussed above, neither Nonoshita nor Barberis teaches or suggests output buffers that are dynamically created in accordance with characteristics of a communication channel being used to transmit the differential data over the network.

Thus, the Applicant respectfully requests that the Examiner's rejection of claims 42 and 44 be withdrawn, and the claims be allowed.

Dependent Claims 43 and 45

Since claims 42 and 44 are believed to be allowable, and since claim 43 depends from claim 42, and claim 45 depends from claim 44, and since claims 43 and 45 add further limitations, it is believed that claims 43 and 45 are allowable.

As such, the Applicant respectfully requests that the Examiner's rejection of these claims be withdrawn, and the claims be allowed.

Nonoshita et al. in view of Barberis et al. and Jeong

The Examiner has rejected claims 32, 33, and 36 under 35 U.S.C. §103(a) as being unpatentable over Nonoshita et al. (U.S. Patent No. 5,905,821) and Barberis et al. (U.S. Patent No. 4,320,500) and in further view of Jeong (U.S. Patent No. 5,497,153).

Since claims 24 and 35 are believed to be allowable, and since claims 32 and 33 depend from claim 24, and claim 36 depends from claim 35, and since claims 32, 33, and 36 add further limitations, it is also believed that claims 32, 33, and 36 are allowable.

As such, the Applicant respectfully requests that the Examiner's rejection of claims 32, 33, and 36 be withdrawn, and the claims be allowed.

Nonoshita et al. in view of Barberis et al. and Khalil

The Examiner has rejected claims 29, 30, and 37 under 35 U.S.C. §103(a) as being unpatentable over the combination of Nonoshita et al. (U.S. Patent No. 5,905,821) and Barberis et al. (U.S. Patent No. 4,320,500) and in further view of Khalil (U.S. Patent No. 5,343,465).

Since claims 24 and 35 are believed to be allowable, and since claims 29 and 30 depend from claim 24, and claim 37 depends from claim 35, and since claims 29, 30, and 37 add further limitations, it is also believed that claims 29, 30, and 37 are allowable.

As such, the Applicant respectfully requests that the Examiner's rejection of claims 29, 30, and 37 be withdrawn, and the claims be allowed.

Conclusion

Applicant respectfully submits that the rejections have been overcome by the Amendment and Remark, and that the claims as amended are now in condition for allowance. Accordingly, Applicant respectfully requests the rejections be withdrawn and the claims as amended be allowed.

Invitation for a Telephone Interview

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

Request for an Extension of Time

The Applicant respectfully petitions for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17 for such an extension.

Charge our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

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Version With Markings Showing Changes Made

Presented below are the amended claims in a marked version showing changes made.

In the claims:

21. Cancelled.
25. (Once Amended) The apparatus of claim_24 further comprising a network interface coupled to the plurality of output buffers, the network interface for interfacing with the network, the network interface determining the selected output buffer and transmitting data over the network from the selected output buffer.
38. (Once Amended) The apparatus of claim 35, wherein each of the output buffers is dynamically created and configured in accordance with characteristics of a communication channel being used to transmit the encoded real-time information over the network.
40. (Once Amended) The apparatus of claim 39, wherein each of the plurality of output buffers is dynamically created and configured in accordance with characteristics of a communication channel being used to transmit the encoded real-time information over the network.
41. (Once Amended) The apparatus of claim 39, wherein the selected output buffer is selected based upon current conditions of [the] a communication channel to be used for transmitting the contents of the selected output buffer.
42. (Once Amended) A method of transmitting data over a network comprising:
encoding the data by determining the differences between the data and a

transmit reference to produce differential data;

storing the differential data in [one of] a plurality of output buffers dynamically created based upon characteristics of a communication channel being used to transmit the [encoded information] differential data over the network;

selecting one of the plurality of output buffers as a current transmit buffer based upon current conditions of a communications channel in the network used to transmit the differential data; and

transmitting the differential data from the current transmit buffer over the network.

46. (Once Amended) An apparatus comprising:

an encoder for producing encoded real-time information;

compression circuitry coupled to the encoder for producing compressed data based upon a previously stored transmit reference and the encoded real-time information;

a plurality of dynamically created output buffers coupled to the compression circuitry for storing the compressed data, each buffer being configured in accordance with characteristics of a communication channel being used to transmit the encoded real-time information over a network; and

a network interface coupled to the plurality of output buffers, the network interface transmitting compressed data from a selected output buffer of the plurality of output buffers, the compressed data from the selected output buffer when used in conjunction with the previously stored transmit reference approximating a next frame expected by a receiving apparatus.

47. (Once Amended) The method of claim 46, wherein said encoder produces encoded real-time information by determining the differences between the real time [data] information and a transmit reference.